

IN THE SPECIFICATION

Please amend the paragraph between lines 12 and 22 on page 1 as follows:

The field of microfluidics concerns the fabrication and use of devices that have dimensions on the order of micrometers (μm) to millimeters (mm). The microsize and microfeatures of these devices offer~~offers~~ significant potential for research and applications within such disciplines as medicine, biochemistry, chemistry and biology. An individual microfluidic device can be used to simultaneously investigate up to thousands of samples from a diverse group of biological and chemical materials or assays. Other applications for these devices include molecular, cellular, proteomic, genomic, gaseous analyses and diagnostics in addition to the interrogation of biological, chemical or physical events.

Please amend the paragraph between line 19 on page 13 and line 2 on page 14 as follows:

A substrate or plate of the invention can be fabricated by such described conventional manufacturing practices. A substrate fabricated by these standard practices is generally comprised of optic fibers arranged and aligned with one another such that the axes of the optic fibers are perpendicular to the light input and output surfaces of the substrate. As mentioned, such a substrate does not have an intrinsic tolerance as light impinging on the input surface is directly transmitted to the output surface. This result tends to limit the extent of any optical distortion and can also improve interrogation resolution. A substrate according to the invention might also comprise optic fibers that are tapered for more efficient light collection. A microfluidic device of the invention further does not require that fiber optic interrogation occur through, for instance, a glass or plastic cover slide or any other translucent platform. These slides or platforms act as windows through which light is gathered and transmitted and can affect optical resolution and quality as well as increase the extent of optical distortion.